

DESCRIPTIONS OF ONAGRANRENA ASSOCIATED WITH
OENOTHERA AND CLARKIA WITH TAXONOMIC
NOTES ON OTHER SPECIES

(Hymenoptera: Andrenidae)¹

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During field studies of the ecology and behavior of North American bees which collect pollen from plants of the family Onagraceae, a number of new species of *Andrena* (subgenus *Onagrandrena*) have been encountered. Descriptions of several of these are offered at this time in order that the names may be available for use in other publications. At the same time, the opportunity is utilized to make known the results of examinations of the types of several of the earlier described species, the status of which had been uncertain.

Andrena (*Onagrandrena*) *furva*

Linsley & MacSwain, new species

Female.—Related to *A. (O.) blaisdelli* Cockerell. Integument black; hairs black, those of mesonotum short, brownish, heavily plumose. *Head* with clypeus densely punctate, without indication of a median smooth line; labrum with apical process convex, heart-shaped; vertex without a smooth area adjacent to ocelli, antennae with first flagellar segment, measured along anterior margin, shorter than second and third combined. *Mesosoma* with mesoscutum dull, moderately coarsely and densely punctate, discal punctures contiguous and sub-contiguous, interspaces reticulate, pubescence short, dense, brown, heavily plumose, with a few longer black hairs intermixed; mesoscutellum similarly punctured; mesopleura coarsely, closely punctate, the punctures shining; propodeum coarsely rugosopunctate, shining, basal enclosure somewhat irregularly rugulose, basal and median ridges predominantly longitudinal, straight, postero-lateral ridges oblique but uneven and poorly defined; wings faintly tinted with black; legs with scopa of posterior tibiae long and dense. *Metasoma* moderately slender, apical margins of terga impressed and shining, impunctate area widest in mid-dorsal area, narrowing and sharply defined laterally. Length approximately 11 mm., anterior wing 7 mm.

Male.—Unknown.

Holotype female (California Academy of Sciences, Entom-

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ology), from 4.5 MILES NORTHEAST OF SANTA MARGARITA, SAN LUIS OBISPO COUNTY, CALIFORNIA, April 28, 1959, at 11 a.m. P.S.T.³ (J. W. MacSwain). *Paratypes* (California Insect Survey, University of California, Berkeley) from the same locality as follows: one female, April 21, 1959, at 8:45 a.m. (J. A. Chemsak), one female, April 28, 1959, at 11:15 a.m. (J. W. MacSwain) and one female, May 1, 1959, at flowers of *Oenothera contorta* var. *epilobioides* (but not taking pollen) at 10:57 a.m. (J. A. Chemsak). One additional female (not designated as a paratype) was captured at Deep Creek, San Bernardino County, California, May 20, 1937 (G. C. Varley in P. H. Timberlake collection), another at Altadena, Los Angeles County, California, May 2, 1936 (C. D. Michener).

This species differs from *A. (O.) blaisdelli* by the more coarsely, densely punctate mesocutum which is clothed with shorter, more densely plumose brownish hairs and the shorter first flagellar segment of the antennae.

Andrena (Onagrandrena) raveni

Linsley & MacSwain, new species

Female.—Integument black with evanescent bluish or violaceous reflections; metasoma bright blue or violet-blue; pubescence black. *Head* with clypeus convex, moderately shining but without indication of a median impunctate line, densely, subcontiguously punctate at base, less closely toward apex where the punctures are separated by one or more diameters, labrum with apical process as long as or slightly longer than broad; vertex with a smooth area on each side of ocelli; antennae with flagellum brownish, first segment, measured along anterior margin, a little longer than second and third combined. *Mesosoma* with mesoscutum feebly shining, densely punctate, punctures mostly less than one diameter apart, surface between punctures very finely, shallowly, reticulate, areas enclosed by reticulations square-shaped; mesoscutellum finely, closely punctate; mesopleura densely punctate, the punctures coarser than those of mesoscutum; propodeum coarsely, contiguously and more or less confluent punctate, basal enclosure moderately coarsely, regularly rugose, median and basal ridges longitudinal, postero-lateral ridges oblique; wings lightly tinted with blackish; legs with scopae of posterior tibiae long and dense. *Metasoma* moderately narrow, shining, second tergum with most discal hairs long, predominantly plumose, terga two to four with a narrow impunctate apical margin. Length approximately 11 mm., anterior wing 8.5 mm.

Male.—Integument black; metasoma bright blue or violet-blue; pubes-

³ All times reported in this paper are Pacific Standard Time.

cence long, predominantly black, with whitish or yellowish-white hairs on vertex, on genae below mandibles, dorsum, sides and venter of thorax and on first metasomal tergum. *Head* with clypeus densely punctate; labrum with apical process broad, shining, shallowly emarginate; antennae with first segment, measured along anterior margin, a little longer than second. *Mesosoma* with mesoscutum dull, moderately closely punctate but some discal punctures separated by at least one diameter, pubescence thin, not obscuring surface, mesoscutellum a little more densely punctate, more densely clothed with long pale hairs, propodeum coarsely rugoso-punctate, basal enclosure regularly rugose, basal and median ridges longitudinal, postero-lateral ridges oblique. *Metasoma* with a narrow impunctate apical margin. Length, approximately 11 mm., anterior wing 8.5 mm.

Holotype female and allotype male (California Academy of Sciences, Entomology) from 9.5 MILES WEST OF AUSTIN, LANDER COUNTY, NEVADA, June 7, 1959, visiting *Oenothera clavaeformis integrrior*, at 8:06 a.m. and 8:29 a.m., respectively (J. W. MacSwain) and 388 paratypes (California Insect Survey, University of California, Berkeley) as follows:

Same locality and flowers; 2 females, June 6, 1959 between 9:00–9:10 a.m.; 49 females, June 6, 1959, between 3:51–6:27 p.m. (some taking pollen); 1 male and 46 females, June 7, 1959 (none with pollen); 1 female from 11 miles west of Austin, June 6, 1959, visiting *Oenothera clavaeformis integrrior*, between 8:50–8:55 a.m.; 11 females from 14.5 miles west of Austin, June 6–7, 1959 visiting *Oenothera clavaeformis integrrior*, between 8:30–8:45 a.m. and 7:53–9:25 a.m.; 61 females, 9.5 miles west of Austin, June 6, 1960, visiting *Oenothera clavaeformis integrrior* (25 with pollen), between 4:08 and 6:16 a.m.; 55 females, same locality and flowers (4 with pollen), June 7, 1960, between 6:02 and 7:14 a.m.; 43 females, same locality and flowers (16 with pollen), June 7, 1960, between 3:54 and 5:59 p.m. (J. W. MacSwain); 16 females, 9.7 miles west of Austin, Reese River Valley, June 6, 1960, visiting *Oenothera clavaeformis integrrior* (none with pollen), between 6:15 and 7:12 a.m.; 25 females same locality and flowers (12 with pollen), between 4:10 and 5:41 p.m.; 2 males, 8 females, 14.7 miles west of Austin, Reese River Valley, June 5, 1960, visiting *Oenothera clavaeformis integrrior* (none with pollen), between 6:30 and 6:40 a.m.; 2 males, 8 females, same locality and flowers (2 with pollen), June 6, 1960, between 4:06 and 5:59 p.m.; 2 males, 1 female, same locality, June 5, 1960, taking nectar from *Sisymbrium altissimum* at 11:01 to 11:12 a.m. and 4:45 p.m. respectively (E. G. Linsley); 1 male, 4 females, 14.5 miles west of Austin, June 5, 1960, visiting *Oenothera clavaeformis integrrior* (none with pollen); 1 male, 12 miles east of Austin, June 11, 1960, visiting *Oenothera clavaeformis integrrior* (J. W. MacSwain); 2 males, 44 females, 3 miles east of Railroad Pass, Lander County, Nevada, June 7, 1960, visiting flowers of *Oenothera clavaeformis integrrior* between 5:51 and 6:55 a.m.; 2 males,

1 female, 2.5 miles east of Austin Summit, Lander County, Nevada, June 6, 1960, taking nectar from *Taraxacum officinale* (E. G. Linsley).

Additional specimens (not designated as paratypes) are as follows:

One female, Umatilla, Umatilla County, Oregon, June 24, 1882; 4 females, Steamboat Springs, 10 miles south of Reno, Washoe County, Nevada, May 29, 1959, collecting pollen from *Oenothera clavaeformis cruciformis*, between 7:40–8:11 a.m. (P. H. Raven); 4 females, Reno, 10 miles south on U.S. Highway 395, Washoe County, Nevada, June 18–19, 1959, collecting pollen from *Oenothera clavaeformis cruciformis*, at 7:03 a.m., 7:09 a.m. and 6:42 a.m. (E. G. Linsley, R. W. Thorp, G. I. Stage); 2 males, 48 females, same locality and flowers (12 with pollen), June 10, 1960, between 5:42 and 7:38 a.m. (E. G. Linsley, J. W. MacSwain); 3 females, 4 miles east of Emigrant Pass, Eureka County, Nevada, June 14, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (all with pollen), between 6:05 and 6:35 a.m.; 1 female, 22 miles west of Emigrant Pass, June 14, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (without pollen), at 7:05 a.m. (J. W. MacSwain); 16 females, 28.5 miles west of Eureka, Eureka County, Nev., June 8, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (6 with pollen), between 6:48 and 8:02 a.m. (E. G. Linsley and J. W. MacSwain); 9 females, same locality and date, visiting flowers of *Stanleya pinnata* (none with pollen), between 7:27 and 8:45 a.m. (J. W. MacSwain); 34 females, same locality, June 9, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (18 with pollen), between 6:20 and 8:58 a.m. (E. G. Linsley, J. W. MacSwain); 5 females, same locality and date, visiting flowers of *Stanleya pinnata* (none with pollen), between 7:25 and 8:45 a.m.; 5 females, same locality, June 11, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (1 with pollen), between 4:33 and 5:54 p.m. (J. W. MacSwain); 3 females, 33.8 miles west of Eureka, June 7, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (1 with pollen in the afternoon), 1 at 10:10 a.m. and 2 between 4:05 and 4:08 p.m. (E. G. Linsley, J. W. MacSwain); 7 females, 36.2 miles west of Eureka, June 7, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (5 with pollen), between 3:38 and 3:45 p.m. (E. G. Linsley); 2 females, 37 miles west of Eureka, June 7, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (none with pollen), between 3:47 and 3:48 p.m. (J. W. MacSwain); 7 females, same locality, June 8, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (1 with pollen), between 7:12 and 7:24 a.m. (E. G. Linsley); 5 females, 7.6 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (2 with pollen), between 5:45 and 5:55 a.m.; 8 females, 17.1 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (none with pollen), between 6:05 and 6:15 a.m.; 5 females, 50.2 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (2 with pollen), between 6:55 and 7:00 a.m.; 1 female, 70.8 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (without pollen), between 7:15 and

7:30 a.m.; 4 females, 73.3 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (2 with pollen), between 7:30 and 7:45 a.m.; 1 female, 2 males, 28.5 miles west of Eureka, Eureka County, Nevada, June 7, 1959, visiting *Oenothera clavaeformis integrrior*, between 11:30 a.m. and 12:00 noon; 1 female, 3.6 miles south of Tooele, Tooele County, Utah, June 16, 1959, visiting *Oenothera latifolia* (J. W. MacSwain); 1 female, 3.5 miles south of Ravendale, Lassen County, California, June 20, 1959, visiting *Oenothera tanacetifolia* at 7:12 a.m. (G. I. Stage); 21 females, 6.5 miles north of Termo, Lassen County, California, June 21, 1959, taking pollen from *Oenothera tanacetifolia* between 6:34–8:24 a.m. (G. I. Stage); and 17 females, 0.5 miles north of Madeline, Lassen County, California, June 21, 1959, taking pollen from *Oenothera tanacetifolia* between 6:34–7:59 a.m. (R. W. Thorp); 2 females, June 9, 1960, visiting flowers of *Oenothera tanacetifolia* (2 with pollen), between 8:47 and 9:56 a.m.; 1 male, 1 female, same locality, date and flowers at 7:31 a.m. and 1:40 p.m. respectively (without pollen); 1 female, same locality and date, visiting flowers of *Madia ramii* for nectar at 10:34 a.m.; 2 males, same locality and date, 1 cruising bush at 9:12 a.m., the other visiting *Agoseris glauca* for nectar between 11:10 and 11:20 a.m.; 1 female, same locality, June 11, 1960, visiting flowers of *Oenothera tanacetifolia* (with pollen), at 8:29 a.m.; 1 female, 2 miles north of Ravendale, Lassen County, California, June 10, 1960, on ground at 7:46 a.m. (G. I. Stage); and 4 females, 5.5 miles north of Termo, June 23, 1960, visiting flowers of *Oenothera tanacetifolia* (1 with pollen), between 6:58 and 8:12 a.m. (J. W. MacSwain).

This species differs at once from other members of the *oenotherae* complex by the blue coloration of the abdomen in both sexes. It can also be differentiated by having the produced apex of the labrum short, not or scarcely longer than wide. Also, the mesoscutum is feebly shining and the surface between the punctures is very finely, shallowly reticulate with the network being composed of square-shaped enclosures.

Andrena (*Onagrandra*) *chylismiae*

Linsley & MacSwain, new species

Female.—Integument black; pubescence black. *Head* with clypeus convex, densely punctate, without indication of a median longitudinal smooth line; labrum with apical process narrow, parallel-sided, longer than broad; vertex punctate between ocelli and compound eyes; antennae with first flagellar segment, measured along anterior margin, as long as second and third combined, flagellar segments black. *Mesosoma* with mesoscutum opaque, closely punctate, punctures mostly less than a diameter apart, interspaces finely reticulate, areas enclosed by reticulations sub-circular, distinctly impressed; mesoscutellum closely punctate; mesopleura a little more coarsely, densely punctate than mesoscutum; propodeum coarsely, subcontiguously, reticulate-punctate, basal enclosure very coarsely,

irregularly rugose, wings lightly tinted with blackish; legs with scopae of posterior tibiae moderately long, subequal to width of tibiae, and moderately dense. *Metasoma* broad; second tergum with most anterior hairs long, predominantly plumose, surface moderately coarsely punctured, most punctures separated by from one to three diameters, terga two to four without a broad, apical impunctate band, apical impressed margin densely punctate. Length approximately 13.5 mm., anterior wing 10 mm.

Male.—Integument black; pubescence entirely black. *Head* with clypeus moderately, coarsely, densely punctate; labrum with process emarginate, bilobed; antennae with flagellum black, first segment about as long as second. *Mesosoma* with mesoscutum opaque, very densely punctate and reticulate, pubescence thin; not concealing surface; mesoscutellum densely clothed with very long, erect hairs, propodeum sculptured much as in the female, enclosed area coarsely, somewhat regularly, longitudinally rugose. *Metasoma* with a narrow impunctate margin on terga two to five, length approximately 11 mm., anterior wing, 9 mm.

Holotype female (California Academy of Sciences, Entomology) from STEAMBOAT SPRINGS, 10 MILES SOUTH OF RENO, WASHOE COUNTY, NEVADA, May 29, 1959, at flowers of *Oenothera clavaeformis cruciformis* at 7:44 a.m. (P. H. Raven), *allotype male* (California Academy of Sciences, Entomology), same locality, June 10, 1960, at flowers of *Oenothera clavaeformis cruciformis* at 7:30 a.m. (E. G. Linsley), and 206 paratypes (California Insect Survey, University of California, Berkeley) as follows:

Nine females from Steamboat Springs, 10 miles south of Reno, Washoe County, Nevada, May 29, 1959, collecting pollen from *Oenothera clavaeformis cruciformis* between 7:20–8:28 a.m. (P. H. Raven); 7 females, Reno, 10 miles south on U.S. Highway 395, Washoe County, Nevada, June 18, 1959, visiting flowers of *Oenothera clavaeformis cruciformis* between 6:40 a.m. and 7:44 a.m. (E. G. Linsley, R. W. Thorp); 31 females, same locality, June 10, 1960, visiting flowers of *Oenothera clavaeformis cruciformis* (15 with pollen), between 5:40 and 7:40 a.m. (E. G. Linsley, J. W. MacSwain); 5 males, Big Pine Creek, Inyo County, California, elevation 8000 feet, May 19, 1947 (R. M. Bohart); 3 males, 28.5 miles west of Eureka, Eureka County, Nevada, June 7, 1959, visiting *Oenothera clavaeformis integrrior* between 11:30 a.m. and 12:15 p.m. (J. W. MacSwain); 8 females 9.5 miles west of Austin, Lander County, Nevada, June 6–7, 1959, visiting flowers of *Oenothera clavaeformis integrrior* at 9:00–9:10 a.m. and between 8:22–8:59 a.m.; 21 females, same locality and flowers, June 7, 1960 (10 with pollen), between 5:18 and 7:10 p.m. (J. W. MacSwain); 5 females, Reese River Valley, 9.7 miles west of Austin, June 6, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (4 with pollen), between 5:46 and 7:08 a.m.; 1 male, Reese River Valley, 14.7 miles west of Austin, June 5, 1960 at flowers of *Sisymbrium altissimum* at 4:44 p.m.; 7 females,

3 miles east of Railroad Pass, Lander County, Nevada, June 7, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (without pollen), between 5:59 and 6:55 a.m.; 2 males, 2.5 miles east of Austin, Lander County, Nevada, June 6, 1960, visiting flowers of *Taraxacum officinale* (E. G. Linsley); 1 female, 12 miles east of Austin, June 11, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (J. W. MacSwain); 26 females, 28.5 miles west of Eureka, Eureka County, Nevada, June 8, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (16 with pollen), between 6:48 and 8:15 a.m.; 19 females, same locality and date, visiting flowers of *Stanleya pinnata* (without pollen) between 7:27 and 9:17 a.m. (E. G. Linsley, J. W. MacSwain); 1 male, same locality and date, visiting flowers of *Haplopappus acaulis*, at 9:00 a.m. (E. G. Linsley); 42 females, same locality, June 9, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (35 with pollen), between 5:37 and 9:03 a.m. (E. G. Linsley, J. W. MacSwain); 7 females, same locality and date, visiting flowers of *Stanleya pinnata* (without pollen), between 7:08 and 8:05 a.m.; 2 females, 7.6 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (without pollen), between 5:45 and 5:55 a.m.; 1 female, 17.1 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (without pollen), between 6:05 and 6:15 a.m.; 1 female, 50.2 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (without pollen), between 6:55 and 7:00 a.m.; 4 females, 73.3 miles north of Eureka, June 13, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (without pollen), between 7:30 and 7:45 a.m.; 3 females, 4 miles east of Emigrant Pass, Eureka County, Nevada, June 14, 1960, visiting flowers of *Oenothera clavaeformis integrrior* (2 with pollen), between 6:05 and 6:35 a.m. (J. W. MacSwain).

This species is apparently related to the following, but females of the two may be readily distinguished by the sculpturing of the propodeal enclosure and the punctation of the second metasomal tergite. The male differs from all others known to us in the wholly black pubescence.

Andrena (*Onagrandrena*) *vespertina*

Linsley & MacSwain new species

Female.—Integument black; pubescence black. *Head* with clypeus convex, densely punctate, without indication of a median longitudinal smooth line; labrum with apical process narrow, parallel-sided, distinctly longer than broad; vertex punctate between ocelli and compound eyes; antennae with first flagellar segment, measured along anterior margin, as long as second and third combined, flagellar segments, except the first, reddish-brown. *Mesosoma* with mesoscutum dullish, finely and closely punctured, punctures mostly less than a diameter apart, interspaces finely reticulate, areas enclosed by reticulations elongate, narrowly impressed; mesoscutellum closely punctate; mesopleura a little more coarsely, densely

punctate than mesoscutum; propodeum coarsely, subcontiguously, reticulate-punctate, basal enclosure finely, longitudinally, and only slightly obliquely rugose, the median ridges more prominent; wings lightly tinted with blackish; legs with scopae of posterior tibiae moderately long (width of tibiae) and moderately dense. *Metasoma* moderately broad, shining, second tergum with most anterior hairs long, predominantly plumose, surface finely punctate, most punctures separated by at least three to five diameters, terga two to four without a broad, apical impunctate band, apical impressed margin shining but distinctly, though finely and sparsely, punctured. Length approximately 12.5 mm., anterior wing 9.5 mm.

Male.—Integument black; pubescence of anterior margin and sides of clypeus, genae behind mandibles, and dorsum of thorax yellowish-white, a few pale hairs on first metasomal tergite, elsewhere black. *Head* with clypeus moderately densely punctate; labrum with process emarginate, bilobed; antennae with flagellum black, first segment about as long as second. *Mesosoma* with mesoscutum dull, moderately closely punctate, pubescence thin, not concealing surface; mesoscutellum densely clothed with very long, erect, yellowish-white hairs; propodeum sculptured much as in the female, enclosed area finely and more or less longitudinally rugulose. *Metasoma* with a narrow impunctate margin on terga two to five. Length approximately 10.5 mm., anterior wing 8 mm.

Holotype female (California Academy of Sciences, Entomology) from 18 miles east of Bakersfield, Kern County, California, April 19, 1958, collecting pollen from *Oenothera decorticans decorticans* between 5:07 and 5:17 p.m., (E. G. Linsley), *allotype male*, same locality, March 9, 1959, taking nectar from *Isomerus arborea* between 9:30 and 11:45 a.m., (R. W. Thorp), and 121 paratypes (California Insect Survey, University of California, Berkeley), all from the same locality, as follows:

Five males, 3 females, March 28, 1953 (J. W. MacSwain); 20 females, April 19, 1958, collecting pollen from *Oenothera decorticans decorticans* between 5:13 and 5:35 p.m. (E. G. Linsley, J. W. MacSwain); 20 males, 2 females, March 9, 1959 (J. W. MacSwain, R. W. Thorp); 4 males, 6 females, March 27–28 and April 2, 1959 (E. G. Linsley, J. W. MacSwain, J. R. Powers, G. I. Stage, R. W. Thorp); 1 female, March 11, 1960 (collecting pollen from *Oenothera dentata* var. *parishii*), at 9:41 a.m. (E. G. Linsley); 16 females, March 12, 1960 (5 with pollen from *Oenothera dentata parishii*, 11 from burrows), between 7:29 and 8:00 a.m. (E. G. Linsley, J. W. MacSwain); 1 female, March 18, 1960, at 6:00 p.m. (J. W. MacSwain); 27 males, March 20, 1960 (cruising bushes), between 7:50 and 8:00 a.m., and 9:05 and 9:10 a.m. (E. G. Linsley, J. W. MacSwain); 1 female, March 20, 1960, visiting flowers of *Oenothera dentata* var. *parishii* (without pollen) at 7:12 a.m. (J. W. MacSwain); 2 males, March 29, 1960, cruising flowers of *Oenothera decorticans decorticans* at 4:12 p.m.; 15 females, March 29, 1960, visiting flowers of *Oenothera decorticans decorticans*

(7 with pollen) between 4:31 and 5:19 p.m. (E. G. Linsley, J. W. MacSwain); 1 male, March 30, 1960, sleeping; 1 male, April 2, 1960, visiting composite (J. W. MacSwain); 5 females, April 2, 1960, 3 visiting flowers of *Oenothera decorticans decorticans* (3 with pollen) between 5:08 and 5:22 p.m. (E. G. Linsley, J. W. MacSwain); 1 female, April 9, 1960, visiting flowers of *Oenothera dentata* var. *parishii* (without pollen) at 6:50 a.m. (E. G. Linsley). Two stylopized females, from the same locality in 1959, are not included in the type series.

This species superficially resembles *A. (O.) oenotherae* which occurs at the same locality but gathers pollen only in the morning from *Oenothera* of a different species group. The two differ in the form of the labral process and the somewhat denser black thoracic pubescence of *vespertina*.

Andrena (Onagrandrena) nevadae

Linsley & MacSwain, new species

Female.—Integument black; pubescence black. *Head* with clypeus shining, discal punctures mostly separated by one or more diameters; labrum with produced apex of process tumid, not longer than broad; antennae with first flagellar segment, measured along anterior margin, a little shorter than second and third segments combined. *Mesosoma* with mesoscutum slightly shining, surface between punctures very finely and obscurely reticulate, most discal punctures separated by less than one diameter, pubescence moderately long, erect, not obscuring surface; mesoscutellum more densely punctate; propodeum coarsely rugoso-punctate, basal enclosure somewhat irregularly rugose, but with median longitudinal ridge and an anterior ridge curving in toward it from the base on each side, peripheral ridges short, oblique; wings tinted with blackish; legs with scopae of posterior tibiae very long (almost twice width of tibiae), thin and loose. *Metasoma* moderately robust, apical impression of first tergum more densely punctate than disk, the punctures subequal in size, terga of metasomal segments two to four uniformly punctate except for a very narrow posterior margin in apical impression, pubescence long, plumose throughout, appressed dorsally, suberect laterally, the longest hairs on second tergum nearly one-third as long as segment. Length approximately 14.5 mm., anterior wing 10.5 mm.

Male.—Unknown.

Holotype female (California Academy of Sciences, Entomology), from 1.8 MILES WEST OF PANCAKE SUMMIT, WHITE PINE COUNTY, NEVADA, June 24, 1959, at flowers of *Oenothera claviformis integrrior*; and one paratype female (California Insect Survey, University of California, Berkeley), from 28.5 miles west of Eureka County, Nevada, visiting flowers of *Stanleya pinnata* (without pollen) between 7:27 and 7:30 a.m. (J. W. MacSwain).

This species may be compared with *A. oenotherae* but differs

from it in the sculpturing of the propodeal enclosure, more shining mesoscutum, much larger tibial scopa which is about twice as wide as the tibia, and the very long abdominal pubescence. It is more closely related to *A. anograe*, but may be distinguished by the more shining mesoscutum and the absence of pale thoracic hairs. Like *anograe* and *linsleyi* it has a long thin scopa and is presumably associated with one of the large, white evening-primroses of the subgenus, *Pachylophis* or *Anogra*.

Andrena (*Onagrandrena*) *anograe knowltoni*

Linsley & MacSwain, new subspecies

Female.—Integument black; pubescence black. *Head* with clypeus shining, discal punctures mostly separated by one or more diameters; labrum with produced apex of process tumid, broader than long; antennae with first flagellar segment, measured along anterior margin, a little shorter than second and third segments combined. *Mesosoma* with mesoscutum dull, distinctly reticulate between the punctures, most discal punctures separated by one diameter or less, pubescence moderately long, erect, not obscuring surface; mesoscutellum more densely punctate; propodeum coarsely rugoso-punctate, basal enclosure somewhat irregularly rugose, but with a median longitudinal ridge and an anterior ridge curving in toward it from the base on each side, peripheral ridges short, oblique; wings tinted with blackish; legs with scopae of posterior tibiae almost twice as wide as tibiae. *Metasoma* moderately robust, apical impression of first tergum more densely punctured than disk but punctures much smaller, terga of metasomal segments two to four uniformly punctate without a narrow impunctate margin in apical impression, pubescence long, plumose throughout, the longest hairs of second tergum more than one-third as long as segment. Length approximately 15 mm., anterior wing 11 mm.

Male.—Unknown.

Holotype female (California Academy of Sciences, Entomology) from 5 MILES SOUTH OF GREEN RIVER, EMERY COUNTY, UTAH, May 24, 1960, visiting flowers of *Stanleya pinnata* (G. F. Knowlton); and 23 paratypes (California Insect Survey, University of California, Berkeley) as follows: 4 females, same data as holotype; 1 female from 10 miles north of Green River, May 29, 1959, at flowers of *Stanleya pinnata*; 9 females, Green River, May 24, 1960, visiting flowers of *Stanleya pinnata* between 6:00 and 6:15 a.m. (G. F. Knowlton); 1 female from the east foot of Red Plateau, Emery County, Utah, June 5, 1958, at flowers of *Oenothera scapoidea scapoidea* (a few pollen grains on body hairs) (P. H. Raven); 8 females, Crescent Junction, Grand

County, Utah, May 24, 1960, visiting *Stanleya pinnata* (G. F. Knowlton).

This form is morphologically similar to the nomino-typical subspecies but averages slightly larger and differs markedly in the color of the pubescence. The type has all black pubescence as do five of the paratypes. In the remaining paratypes there is a variation from a few pale fulvous hairs on the mesoscutum to predominantly pale with a few pale hairs on the vertex of the head and on the first metasomal tergum. The pubescence of the mesoscutum is entirely ochraceous to reddish brown in the nomino-typical form and is more extensive on the head and metasomal terga.

ANDRENA (ONAGRANRENA) OMNINIGRA Viereck

Andrena (Andrena) omninigra Viereck 1917, Trans. Amer. Ent. Soc., 43:385, ♀.

Andrena grundeli Linsley, 1938, Proc. Calif. Acad. Sci., (4) 23:274, ♀ ♂.
New synonymy.

An examination of the type of *A. (A.) omninigra* Viereck has revealed that it represents the species subsequently described as *A. grundeli* Linsley. The type is in poor condition being broken and partly devoured by museum pests; but the characters to which we attach the most taxonomic significance are mostly evident and there can be little doubt of the synonymy.

Andrena (Onagrana) omninigra clarkiae

Linsley & MacSwain, new subspecies

Female.—Morphologically similar to the nominotypical subspecies but smaller (range in length of forewing, 9.0–10.3 mm., average of 17 specimens, 9.7 mm., as against a range from 10.5–11 mm. and average of 10.7 in 10 specimens in *o. omninigra*).

Male.—Morphologically similar to the nominotypical subspecies but apparently smaller (range in length of forewing 7.8–8.5 mm., average of 18 specimens, 8.2; the only male of *o. omninigra* available for comparison, 9.8), with an indistinct transverse band of dark hairs across the thorax (only a few scattered dark hairs in *o. omninigra*), and with the white hairs of the abdomen limited to the first metasomal segment (rarely on second, also) rather than on all segments.

Holotype female and allotype male (California Academy of Science, Entomology); ARROYO SECO, MONTEREY COUNTY, CALIFORNIA, May 21, 1955 (P. Torchio). Paratypes, 67 ♀♀ and 52 ♂♂, from the type locality on various dates from May 3 to June 6, between 1955 and 1958 (R. C. Bechtel, R. M. Bohart, D. J. Burdick, D. D. Linsdale, E. G. Linsley, J. W. MacSwain, A. E.

Menke, D. Ribble, L. A. Stange, and P. Torchio). All females with pollen had been working flowers of *Clarkia*.

ANDRENA (ONAGRANDRENA) BERNARDINA Linsley

Andrena bernardina Linsley, 1938. Proc. Calif. Acad. Sci. (4) 23:275, ♀ ♂.

Andrena grundeli bernardina, Linsley and MacSwain, 1955, Pan-Pacific Ent., 31 (4):166.

The study of fresh material reveals that this is a distinct species, not subspecifically related to *A. (O.) omninigra (grundeli)* as we had at one time supposed. The females differ as follows:

Disk of mesoscutum coarsely, subcontiguously punctate, with the pubescence uniform, shorter than width of flagellum, densely plumose; wings very dark black.....*omninigra*

Disk of mesoscutum moderately coarsely punctate, the punctures distinctly separated, and the pubescence composed of long and short hairs intermixed, the length of the longer hairs greater than width of the flagellum, the hairs only moderately plumose; wings dark brownish*bernardina*

The males differ in the color of the facial hairs, those of *bernardina* being predominantly black, those of *omninigra* predominantly white. Both species apparently gather their pollen from *Clarkia*.

ANDRENA (ONAGRANDRENA?) YUMORUM Viereck

Andrena (Andrena) yumorum Viereck, 1916, Proc. Acad. Nat. Sci. Philadelphia, 68:585, ♂.

The subgeneric position of this species has been uncertain and Lanham (1949) left it unassigned. Based upon an examination of the type, we regard it as very possibly *Onagrandrena*, although the discovery of the female will probably be necessary to settle the question. The unique male is larger than any of those now assigned to the subgenus. The ground color is as in *A. (O.) rubrotincta* Linsley. The mesoscutum is closely punctate (the punctures separated by less than one diameter), with an almost transverse black band of hairs. The propodeal enclosure is coarsely and more or less regularly, longitudinally rugose. The abdominal pubescence is moderately dense and long, as in the male of *A. (O.) oenotherae* Timberlake, the segments have a narrow impunctate apical margin, most of the discal punctures being separated by one diameter or less. The length ratio of the first and second antennal flagellar segments is as 9:7. Although Viereck named this species "*yumorum*," there is no data on the

type specimen to indicate the precise area from which it came. The original publication cites the type locality as "California (Norton)."

ANDRENA STICTIGASTRA Viereck

Andrena (Andrena) stictigastrea Viereck, 1916, Proc. Acad. Nat. Sci., Philadelphia, 68:579, ♀.

Andrena (Onagrandrena?) stictigastrea, Linsley and MacSwain, 1956, Pan-Pacific Ent., 32(3):114.

This species was questionably referred to *Onagrandrena* on the basis of the black coloration, coarsely rugose enclosure of the propodeum, and certain other characters reported in the original description. However, an examination of the type revealed that the tibial scopa is much denser than in *Onagrandrena*, with the hair very densely plumose and unsuited for gathering pollen from Onagraceous flowers. We therefore exclude it from this subgenus as currently defined.

ANDRENA PHENAX Cockerell

Andrena phenax Cockerell, 1898, Trans. Amer. Ent. Soc., 25:188, ♀.

Andrena (Onagrandrena?) phenax, Linsley and MacSwain, 1956, Pan-Pacific Ent., 32(3):113.

This species, also doubtfully referred to *Onagrandrena* because of the black coloration and tessellate surface of the mesoscutum, is also excluded on the basis of an examination of the type. The scopa is plumose and moderately dense with the hairs bent but not recurved.

ANDRENA (MELANDRENA) PRIMA Casad

Andrena prima Casad, 1896, Ann. Mag. Nat. Hist., (6) 18:78.

Andrena (Melandrena) prima, Lanham, 1949, Univ. Calif. Publ. Ent., 8(5):221.

Andrena (Onagrandrena) prima, Linsley and MacSwain, 1956, Pan-Pacific Ent., 32(3):112.

When *Onagrandrena* was proposed for the majority of the species assigned by Lanham to the subgenus *Melandrena* (type *Andrena morio* Brullé), *Andrena prima* Casad was assumed to fall in the former group on the basis of the original description. However, examination of the type showed that its characters are more similar to those of *A. (Melandrena) nigra* Provancher. The tibial scopia is made up of dense, short, depressed, plumose hairs and the mesonotal pubescence is short and dense as in *A. nigra*. The propodeal enclosure is well defined but somewhat smaller than in *Onagrandrena*.

ANDRENA (DIANDRENA) FOXII Cockerell

Andrena foxii Cockerell, 1898, Trans. Amer. Ent. Soc., 25:188, ♀ ♂.

Andrena (Diandrena) foxii, Lanham, 1949, Univ. Calif. Publ. Ent., 8(5):219;
Linsley, 1951, U. S. Dept. Agr. Monogr., 2:1065.

Andrena (Onagrandrena) foxii Linsley and MacSwain, 1956, Pan-Pacific Ent., 32(3):113.

The anomalous characters of this species are shared to some extent with both *Diandrena* and *Onagrandrena*. However, a restudy based upon a long series of fresh specimens of both sexes suggests that the greater weight should be given to the nature of the integumental sculpturing and the presence of only two submarginal cells. We propose to return it to *Diandrena* where it was assigned by Lanham (1949) and Linsley (1951).

EXOMALOPSIS ALBICANS (PROVANCHER), A NEW
GENERIC RECORD FROM OREGON¹

(Hymenoptera: Anthophoridae)

The genus *Exomalopsis* is essentially neotropical, extending from Argentina in the south, to the southern and southwestern portion of the United States in the north. Of the 27 species found in the arid regions of the southwestern United States, one, *E. albicans* (Provancher), has been recorded as far north as Middletown, Lake County, California.

Recently, eight specimens of *E. albicans* from Oregon were found among the material in the Oregon State University collections. The records, which extend the known northern limit of this species and the genus, by over 500 miles, include: one female, Murphy, Josephine County, July 22, 1941 (J. D. Vertrees); and seven females, six mi. W. Bly, Klamath County, August 18, 1955 (W. P. Stephen).

Examination of the Oregon material indicates that the Josephine County female is nearly identical with the typical California *E. albicans*. The Klamath County females, however, have considerably less white pile on the apical half of metasomal terga 2 to 4 and lack the distinct demarkation between the black pile of the base and the white pile on the apex of each of these terga.
—W. P. STEPHEN AND P. F. TORCHIO, *Oregon State College, Corvallis*.

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